

EUROPEAN PATENT APPLICATION

Application number: 88310291.5

Int. Cl.4: **A63B 49/08 , A63B 53/14**

Date of filing: 02.11.88

Priority: 04.11.87 GB 8725836

Date of publication of application:
10.05.89 Bulletin 89/19

Designated Contracting States:
AT BE CH DE ES FR GB GR IT LI LU NL SE

Applicant: **AVON INDUSTRIAL POLYMERS LIMITED**
Bath Road
Melksham Wiltshire SN12 8AA(GB)

Inventor: **Head, Robert William**
18 Lebrurnum Drive
Melksham Wiltshire(GB)
Inventor: **Aldridge, James Stewart**
Rose Cottage 53 The Green
Poulsbot Devizes Wiltshire(GB)

Representative: **Harrison, David Christopher**
MEWBURN ELLIS & CO 2/3 Cursitor Street
London EC4A 3BQ(GB)

Grips for handles.

A handle grip (2) comprises an end cap (7) and an elastomeric sleeve (1). The end cap (7) is retained in the sleeve by projecting legs (10) having barbed enlargements (11) which are to lie between the handle (20) and engage in recesses (5,6) in the internal surface of the sleeve (1). The end cap may comprise a separate cover (18). The sleeve may have axial channels in its inner surface for receiving the legs (10) or barbed enlargements (11) thereon during insertion of the end cap (7).

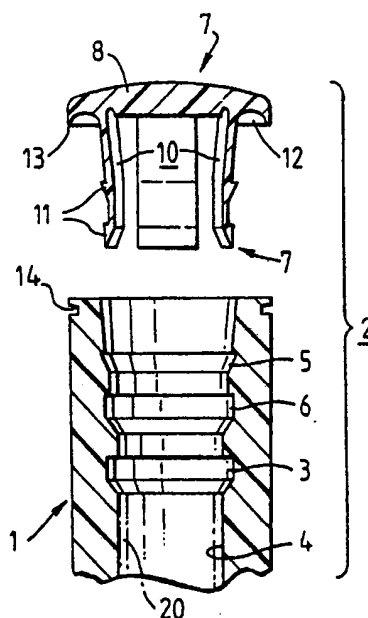


Fig.1.

EP 0 315 423 A1

GRIPS FOR HANDLES

This invention relates to grips for handles and particularly to grips for the handles of games implements such as tennis and squash racquets and golf clubs.

Handle grips comprising separate end caps and sleeves are known.

For example

DE-A-3217788 discloses a deformable end cap on the end of a wooden tubular sleeve. The end cap is deformed in situ so as to drive enlargements on its legs into the internal wall of the sleeve.

GB-A-1356971 discloses a handle grip in which the sleeve is of elastomeric material, the end cap having legs which (in its Figure 6) fit between a handle and the sleeve.

In GB-A-2125299 the skirt of an end cap which encloses a balancing weight is shrunk onto the end of the handle and then covered by the turning back of a rubber sleeve.

The present invention provides a handle grip which is more convenient and effective in use than those of the prior art.

This is done by providing a handle grip in which the end cap has a projection to fit between a handle and the sleeve with enlargements thereon to fit into recesses in the sleeve, thereby to retain the end cap in the sleeve. It is preferred that the projecting part is a plurality of separate legs, in which case the sleeve includes on its inner surface adjacent the end engaging the end cap recesses for engaging said legs. Additionally the sleeve may have on its inner surface axial channels for engaging enlargements on the projecting part.

Retention of the cap on the handle may be assisted or further assisted by an adhesive surface on the handle.

Since the parts of the grip are separate selections may be made of different grades or character or colour of sleeve and cap, for example to denote different qualities or nature of the implement, or to provide a "personalised" implement for an individual.

It will be specifically explained with reference to grips for golf clubs, known as golf grips.

A particular embodiment of the invention will now be described with reference to the accompanying drawings wherein:-

Figure 1 shows the parts of a first embodiment of the invention in diametrical section,

Figure 2 is a perspective exploded view of the end cap of the grip of Figure 1;

Figure 3 is a diametrical section of the grip of Figure 1 assembled on a handle of a golf club;

Figure 4 shows, in diametrical section, a second embodiment of the invention assembled on a handle of a golf club;

Figure 5 shows a cover for the end cap in diametrical section;

Figure 6A to 6E show various types of end cap, all in diametrical section;

Figure 7 is a plan view of a modified sleeve; and

Figure 8 shows a diametrical section of the sleeve of Figure 7.

An open-ended sleeve 1 of elastomeric material for a golf grip 2 is moulded in the usual way with a tapered core pin. On its inner surface it has known annular and/or axial recesses 3,4 which affect its "feel" and softness when gripped. Additional annular recesses 5,6 are moulded near to the end of the sleeve which is to be at the end of a handle 20 (Figure 3) on which it is fitted.

An end cap 7 is a separate part of the grip. It has a top disc 8 to cover over the end of the handle 20 and also over the end of the sleeve 1. The cap also has a projecting part 9 consisting of four legs 10 (although other numbers, e.g. six legs, may be employed) or the part may be a skirt. Rotation of the end cap 7 may be prevented by providing, analogous to the embodiment of Figure 8, axial channels in the sleeve 1 at the end of the sleeve adjacent the end cap, the channels being dimensioned to receive the legs 10 of the cap or enlargements on the legs. The legs 10 have on them enlargements 11. These are to engage respectively in annular recesses 5,6. The enlargements 11 have one slanted and one flat face so as to act as if barbed; engagement of the flat faces against the also flat upper faces of the recesses 5,6 acts to prevent withdrawal of the cap 7 once engaged.

The portion of the disc overhanging the legs 10 is undercut at 12 so that there is a downwardly projecting rim 13. When the cap is fully engaged this rim will press down on a marginal part of the end of the sleeve 1, so that there is a positive engagement between them; if desired, distortion of this part of the sleeve can be assisted by a small groove moulded in the outer surface of the sleeve. The gap 14 created between the rim 13 and the sleeve 1 allows venting of the air trapped in the sleeve when the assembled grip is seated on the handle, thus removing the necessity for a hole to be incorporated into the disc 8 for this purpose. In an alternative embodiment the rim 13 extends further downwardly to form an annular lip which loosely engages a corresponding portion of reduced

radius at the top of the sleeve, so as to still permit air venting.

When assembling the grip, the end cap is fitted by simply pressing it into the sleeve. The assembled grip is then seated on the handle 20.

Retention of the grip may be assisted by the presence of a double-sided adhesive tape 15 on the handle.

In Figure 4 there is shown a grip 16 assembled on a handle 20. In this embodiment there is a separate, disc-like, cover 18 which overlies an end body 19 and projections 21 of the cap 17. The cover 18 as shown separately in Figure 5, has an inner mini-skirt 22 spaced inwardly from the periphery of the cover with an inwardly facing annular projection 23 on the inner mini-skirt 22 which engages in an annular recess 24 in the end body 19 thereby to retain the cover on the end body 19 by a snap fit.

The cover 18 also has an outer mini-skirt 25 around its periphery, the inner and outer mini-skirts 22,25 defining therebetween a circular channel 26. A circular projection 27 from the top annular surface of the sleeve 1 lies in the circular channel 26 of the end body 19, thereby to provide a seal against the ingress of e.g. water and dirt.

Various types of end body adapted to receive a cover 18 are shown in Figure 6A to 6E. Obviously this provision of a separate cover increases the flexibility with which the end cap may be used as a denominator of origin, quality, type etc.

In Figure 6A the end body 19 is as described above, having a complete top disc 28. In Figure 6B the top disc 29 of the end body 30 has a coaxial circular aperture 31 in it.

In Figure 6C the central region of the top disc 32 of the end body 33 is formed into a frusto-conical projection 34 projecting in the direction of the extension of the legs 35 which projection 34 serves to guide the end body 33 into a tubular handle when the grip is assembled thereon. This projection may of course be cylindrical.

In Figure 6D the legs of the above described end caps 7,17 are replaced with a continuous skirt 36. Barbed enlargements 37 are provided on the outer surface of the skirt 36 to engage in the recesses in the sleeve. In addition, projections 38 are provided on the internal surface of the skirt 36. The projections 38 serve to assist in securing the end cap to the shaft 20. The end cap can fit over a range of shaft diameters by varying the size of the projections in manufacture.

In Figure 6E, the end body 39 has legs 40 as described above. A single barbed enlargement 41 is present on each leg 40.

Figures 7 and 8 show a plan view of an alternative sleeve 42 which is effective in preventing rotation of the end cap in the sleeve. It has discrete

axial channels 43 for receiving each leg of the end cap, or else the barbed enlargements on each leg. Recesses 44 in each channel 43 are provided with which the barbed enlargements on the legs of the end cap engage. These may have parallel or radial walls, or may as shown be of dovetail-section. In this embodiment, the recesses 43 have a lower part 45 defined by a lip 46 on the internal surface of the sleeve 42, into which, when fitted, is located the extreme end portion of the legs or skirt.

An advantage of this method of construction of grip is that if necessary the end cap can be removed from the grip prior to placing on the shaft of a golf club, and the sleeve initially seated alone. This enables weights for balancing the club to be lodged between the sleeve and the shaft much more conveniently than is the case when the sleeve and end cap are integral.

Claims

1. A combination of a rigid handle (20) of an implement and a handle grip, the handle grip comprising an open-ended sleeve (1) of elastomeric material, the sleeve (1) being adapted to fit snugly around an end portion of the handle (20), and a separate end cap (7,17), the end cap (7,17) having a projecting part (9,36) fitting between the sleeve (1) and the handle (20), there being recesses (5,6) in the internal surface of the sleeve(1) for engaging enlargements (11,37) on the projecting part (9,36) of the end cap (7,17), thereby to retain the end cap (7,17) in the sleeve (1).

2. A combination according to claim 1 wherein the end cap (17) comprises an end body (19) having said projecting part (21), and a cover (18) to fit over the end body (19) to form an extreme end of the handle.

3. A combination according to claim 2 wherein an annular projection (27) is provided on the top surface of the sleeve (1) which sealingly engages a part of the cover (18).

4. A combination according to any one of the preceding claims wherein the projecting part (9) of the end cap (7) comprises a plurality of separate legs (10), and the sleeve (1) includes on its inner surface adjacent the end for engaging the end cap (7), axially extending channels receiving the legs (10).

5. A combination according to any one of claims 1-3 wherein the projecting part is a skirt (36) and the sleeve (1) includes on its inner surface adjacent the end for engaging the end cap, axially extending channels receiving said enlargements (37) on the skirt (36).

6. A combination according to any one of the preceding claims wherein the end cap includes an internally projecting hollow part (34) for extending within a hollow said handle.

7. A combination according to any one of the preceding claims wherein said implement is a games racquet or a golf club.

8. A grip for a handle of an implement comprising an open-ended sleeve (1) of elastomeric material, the sleeve (1) being adapted to fit snugly around an end portion of the handle (20), and a separate end cap (7,17), the end cap (7,17) having a projecting part (9,36) fitting between the sleeve (1) and the handle (20), there being recesses (5,6) in the internal surface of the sleeve (1) for engaging enlargements (11,37) on the projecting part (9,36) of the end (7,17), thereby to retain the end cap (7,17) in the sleeve (1).

20

25

30

35

40

45

50

55

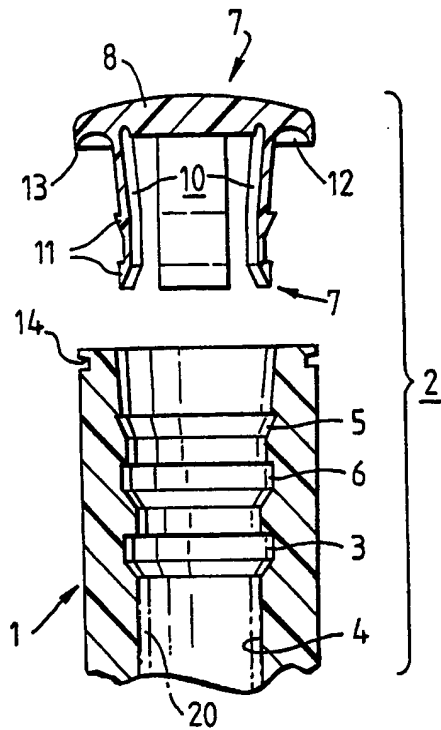


Fig.1.

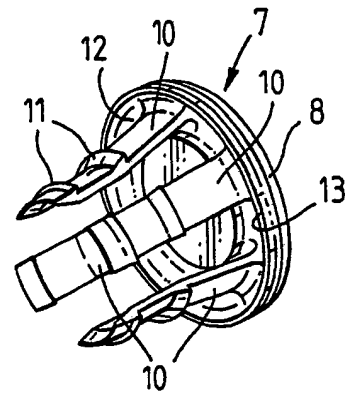


Fig.2.

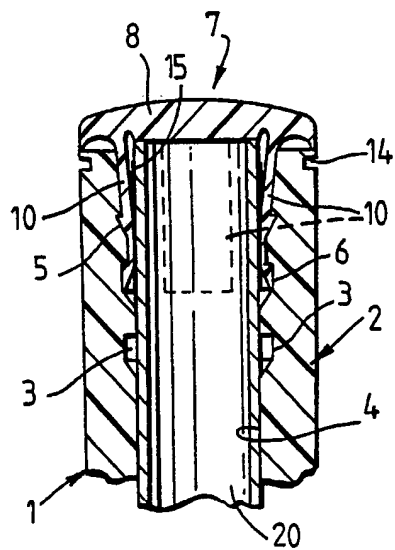


Fig.3.

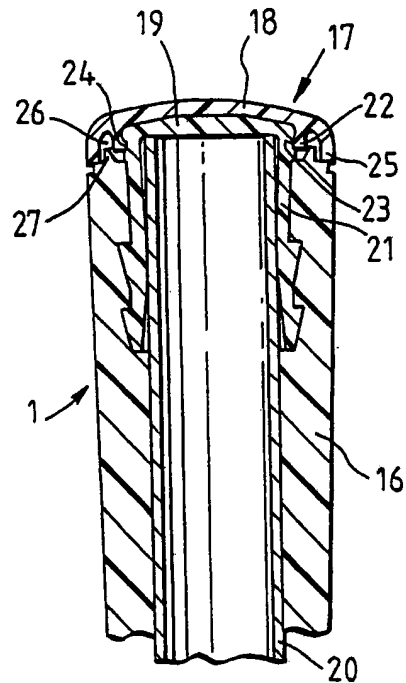


Fig.4.

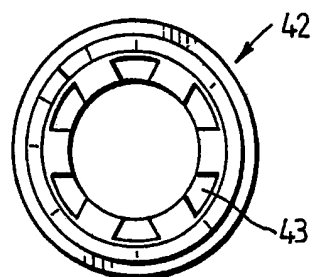
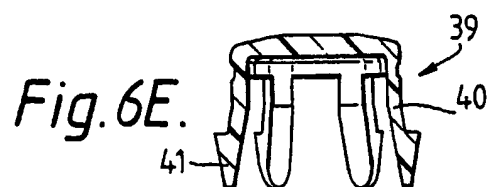
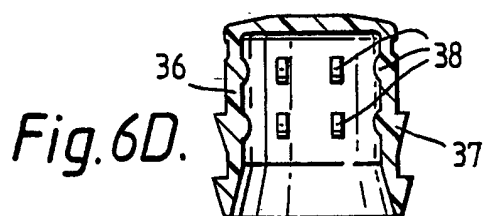
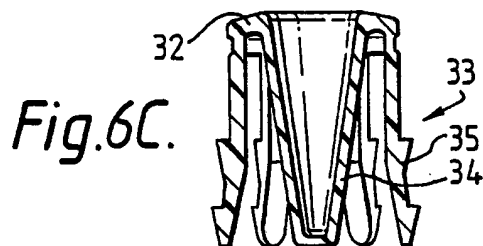
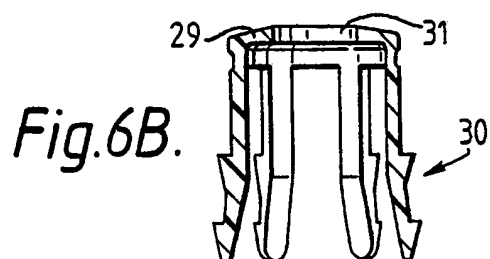
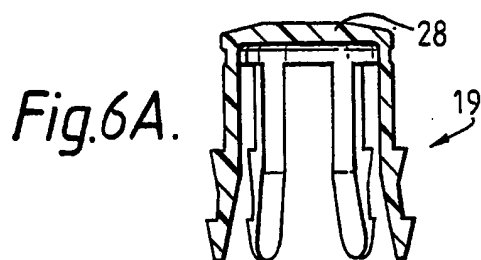
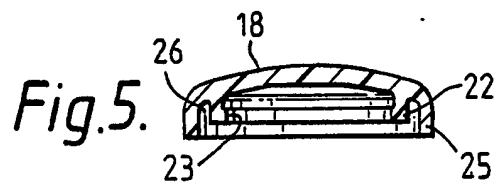


Fig.7.

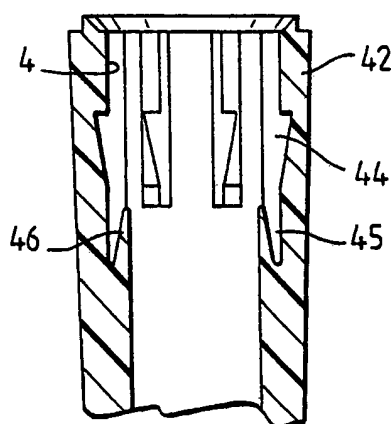


Fig.8.



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 88 31 0291

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CL.4)
D,A	GB-A-1 356 971 (SPARKS) * Figure 6; page 3, lines 97-103 * ---	1,8	A 63 B 49/08 A 63 B 53/14
A	US-A-3 366 384 (LAMKIN) * Figures 1-4; column 3, lines 50-74 * ---	1,8	
A	GB-A-2 186 492 (NIPPON GAKKI SEIZO K.K.) * Figures 1-2; page 1, line 130 - page 2, line 2 * ---	1,8	
A	GB-A-2 125 299 (KEELEY) * Figures 1-3; abstract * -----	1,8	
			TECHNICAL FIELDS SEARCHED (Int. CL.4)
			A 63 B B 25 G
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 06-02-1989	Examiner JONES T.M.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P0401)